

Appln. Serial No. 10/676,220
Amendment Dated September 29, 2006
Reply to Office Action Mailed June 29, 2006

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AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

- 1 1. (Previously Presented) A storage system comprising:
2 a storage medium containing blocks identified by block addresses, the storage medium to
3 store data in hierarchical data structures, each hierarchical data structure containing plural levels
4 of data objects, and each hierarchical data structure stored in a respective group of the blocks;
5 a storage location to store a table having plural entries, each of the plural entries mapping
6 a corresponding identifier of a hierarchical data structure to a respective range of block
7 addresses; and
8 a controller to:
9 in response to a request containing an identifier of at least one of the hierarchical
10 data structures, generate one or more block addresses based on the identifier in the request by
11 accessing the table; and
12 access one or more blocks indicated by the one or more block addresses.
- 1 2. (Cancelled)
- 1 3. (Previously Presented) The storage system of claim 1, wherein the storage location is
2 part of the controller.
- 1 4. (Previously Presented) The storage system of claim 1, wherein the storage location is
2 part of the storage medium.
- 1 5. (Original) The storage system of claim 1, wherein the request comprises one of a read
2 and write request.
- 1 6. (Original) The storage system of claim 1, wherein the request comprises another
2 identifier to identify one of the data objects in the hierarchical data structure.

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- 1 7. (Original) The storage system of claim 6, wherein the request comprises one or plural
2 pointers to point to one or more locations within the data object identified by the another
3 identifier.
- 1 8. (Original) The storage system of claim 1, wherein each hierarchical data structure
2 comprises data objects sharing a common characteristic.
- 1 9. (Original) The storage system of claim 8, wherein each hierarchical data structure
2 comprises a root data object and additional data objects at lower levels of the hierarchical data
3 object.
- 1 10. (Original) The storage system of claim 1, wherein at least one of the data objects is
2 associated with a function invocable by the request to perform a predefined task.
- 1 11. (Original) The storage system of claim 10, wherein at least one of the data objects is
2 associated with an attribute accessible by the request.
- 1 12. (Original) The storage system of claim 1, wherein at least some of the data objects are
2 associated with respective functions invocable by one or more requests to perform predefined
3 tasks.
- 1 13. (Original) The storage system of claim 12, wherein the at least some of the data objects
2 are associated with attributes defining characteristics of respective data objects.
- 1 14. (Original) The storage system of claim 1, wherein each hierarchical data structure
2 includes at least one leaf object, a root object, and at least one intermediate object coupled
3 between the leaf object and the root object.
- 1 15. – 16. (Cancelled)

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1 17. (Previously Presented) A method of accessing data, comprising:
2 storing, by a storage system, data in hierarchical data structures, each hierarchical data
3 structure containing plural levels of data objects;
4 receiving, at the storage system from a host system, a request containing an identifier of
5 one of the hierarchical data structures; and
6 converting, by the storage system, the identifier to one or more block addresses to specify
7 corresponding blocks in a storage medium,
8 wherein receiving the request comprises receiving the request in which the identifier is
9 not translated by the host system.

1 18. (Currently Amended) The method of claim 17, further comprising storing a table of
2 identifiers [[and]] mapped to corresponding ranges of block addresses in the storage system,
3 wherein converting the identifier to the one or more block addresses is based on the table.

1 19. (Previously Presented) The method of claim 17, wherein receiving the request comprises
2 receiving the request that further includes another identifier to identify one of the data objects in
3 the one hierarchical data structure.

1 20. (Previously Presented) An article comprising at least one computer-readable storage
2 medium containing instructions that when executed by a processor cause a storage system to:
3 store data in hierarchical data structures, each hierarchical data structure containing plural
4 levels of data objects, and each hierarchical data structure stored in a respective group of blocks
5 of a storage medium in the storage system;
6 receive, from a host system, a request containing an identifier of one of the hierarchical
7 data structures, wherein the identifier in the request is not translated by the host system; and
8 convert the identifier to one or more block addresses to specify corresponding blocks in
9 the storage medium of the storage system.

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1 21. (Original) The article of claim 20, wherein the instructions when executed cause the
2 storage system to further store functions associated with data objects of the hierarchical data
3 structure, each function to perform a predefined task on a respective data object.

1 22. (Original) The article of claim 21, wherein the instructions when executed cause the
2 storage system to further:
3 receive a second request; and
4 invoke at least one function associated with at least one of the data objects in response to
5 the second request.

1 23. (Original) The article of claim 22, wherein the instructions when executed cause the
2 storage system to further:
3 store attributes associated with the data objects;
4 receive a third request; and
5 access attributes associated with at least one of the data objects in response to the third
6 request.

1 24. (Original) The article of claim 20, wherein receiving the request comprises receiving a
2 request containing a second identifier to identify one of the data objects in the one hierarchical
3 data structure.